Notornis, 2004, Vol. 51: 113-114
0029-4470 © The Ornithological Society of New Zealand, Inc. 2003

SHORT NOTE

Great cormorant (*Phalacrocorax carbo*) breeds in New Caledonia

NICOLAS BARRÉ
Société Calédonienne d'Ornithologie, BP 3135, 98 846 Nouméa, New Caledonia, France

HUBERT GÉRAUX
WWF New Caledonia Office, 20 rue Général Mangin, 98800 Nouméa, New Caledonia, France

Until recently only two species of the Phalacrocoracidae were resident in New Caledonia, the little shag (*Phalacrocorax melanoleucos*) as a common breeder and the little black shag (*P. sulcirostris*) as an occasional vagrant (Hannecart & Létocart 1980; Barré & Dutson 2000). We report the first observations of a third species, great cormorant (black shag , *P. carbo*) and of its successful breeding.

Since the arrival of one of us (NB) in New Caledonia in November 1997, and despite frequent visits to places suitable for shags, sightings of great cormorant only began in late 2001: at Boulouparis (27 February 2001, of 1 bird); Marais Fournier, Gouaro Deva (Bourail)(6 November 2001, 3); Le Cap (Bourail)(6 November 2001, 2); Rivière Tontouta pk 5 (26 November 2001, 1);Boulouparis (12 February 2002, 8); and Boulouparis (28 February 2002, 7). All these birds were large and were considered *a posteriori* i.e. after we had confirmed great cormorant was in New Caledonia, to have been great cormorants.

On 30 March 2002 at "Grand Lac", a freshwater lake in the "Plaine des Lacs" (Yaté municipality), southern New Caledonia, a great cormorant was observed feeding in the middle of the lake. A group of seven little shags were feeding nearby and allowed a size comparison; the black shag was about one third bigger than the little shags, was dull brown, with a yellowish throat pouch and whitish chin and in flight held its neck bent and showed no white thigh patch.

On 6 May 2002, at the Diahot estuary (Ouégoa municipality), northern New Caledonia, four great cormorants were seen perched in tall dead trees, two of which were photographed. Their white throats and cheeks were obvious and, on a photograph of the birds in flight, the white thigh patch was clearly visible. These birds were in nuptial plumage but the nesting site, if one existed, was not identified.

At Marais Fournier on 16 September 2002 an old nest was visible on a dead *Melaleuca quinquenervia* tree and another nest, about 80 cm in diameter and made of branches covered with white guano, was on a small dead tree near the middle of the pond, at about 1 m above water level. When we arrived, five cormorants were visible in the shaded base of a live *Melaleuca* emerging from the water, 25 m away from the "white" nest, standing close to each other and touching beaks actively. A short time later, a sixth bird landed nearby and immediately the other five began to screech, flap their wings and tap the bill of the adult to beg for food. After about one minute, the adult fed the young, then flew to the "white" nest, the five young swimming after it to the foot of the dead tree, calling and flapping their wings. Later, the adult descended to the water and commenced diving, being followed closely by the five begging young. Another feeding session occurred on the water, 30 minutes after the first. Within this group, which we observed from about 80 m, there was no size difference between the birds. The adult did not have a white throat or cheek patches. The young were completely black to dark brown like the adult, without any visibly mottled white underside. The only clear difference between adult and young was the colour of the skin of their pouch and face: bright yellow on the young and a dull orange on the adult.

This is the first record of the presence and breeding of great cormorant in New Caledonia. Allowing an incubation period of one month plus seven weeks in the nest (Moon 2000), these large fledglings in September indicate breeding starting in May-June, i.e. about the time that we observed other black shags in nuptial plumage at Diahot estuary. The eight birds observed in Boulouparis in February 2002 may have been another family group, resulting from local reproduction the previous year. This species is currently scattered over much of the island: the distance between the most southern sighting at Grand Lac and those at Boulouparis is 100 km; it is another 80 km to Bourail; and 180 km from Bourail to Diahot estuary in the north.

The black shag is apparently increasing and/or expanding all over the world (Bregnballe *et al*. 2000, Fukuda *et al*. 2002). In the South Pacific, it is well represented in Australia and New Zealand but its spread elsewhere is recent and limited. For example, Doughty *et al*. (1999) indicated that only the Solomon Islands had been colonised, first as an Australian vagrant on Rennell Island in

Received 7 November 2003; accepted 25 February 2004
Editor M. Williams

1976 (Diamond 1984), where it bred in 1994 (Gibbs 1996) and where 150 birds were counted in June 2001 (Guy Dutson, pers. comm.). Its establishment in New Caledonia is a new focus in the South Pacific. This arrival cannot be explained by recent local habitat or food modifications but may pose a problem in the future for the prawn industry and fresh-water fishing sport; some fishermen have already alerted the authorities to demand that they "regulate" the population of little shags at Lac de Yaté. However, Filardi *et al*. (1999) suggest that on Rennell Island, *Tilapia* may be the only source of food for great cormorant, since its reproduction is related to the fish's introduction.

ACKNOWLEDGEMENTS

Our thanks to the Southern Province of New Caledonia for permission to explore the Gouaro Deva property including the Marais Fournier, Bernard Suprin (Southern Province), Maéva Menges, Marie France Barré, Chantal Lung, Daniel Vallauri and Pierre Bachy who were involved in field observations, Guy Dutson (BirdLife) who provided valuable bibliographic data and Sheryl Mellor (Secretariat of the South Pacific Community) who revised the manuscript.

LITERATURE CITED

Barré, N.; Dutson, G. 2000. Oiseaux de Nouvelle-Calédonie. Liste commentée. *Alauda* 68: 1-48.

Bregnalle, T., Van Eerden, M.R., Engström, H., Knief, W., Kieckbusch, J.J., Eskildsen, J. 2000. Development of the breeding population of cormorants *Phalacrocorax carbo sinensis* in the core areas of NW Europe. *5th International Conference on Cormorants*. 17-21 December 2000. Freising, Germany.

Diamond, J.M. 1984. The avifauna of Rennell and Bellona islands. Pp. 127 – 168 In: Wollf, T. (ed.) *The natural history of Rennell Island, British Solomon Island. University of Copenhagen, Danish Science Press.*

Doughty, C.; Day, N.; Plant, A. 1999. *Birds of the Solomons, Vanuatu and New Caledonia*. Christopher Helm, A. & C. Black, London.

Filardi, C.E.; Smith, C.E.; Kratter, A.W.; Steadman, D.W.; Webb, H.P. 1999. New behavioral, ecological, and biogeographic data on the avifauna of Rennell, Solomon Islands. *Pacific science 53*: 319-340.

Gibbs, D. 1996. Note on the Solomon Island birds. B*ulletin of the British Ornitholological Club 116*: 18-25.

Hannecart, F. ; Létocart, Y. 1980. *Oiseaux de Nouvelle-Calédonie et des Loyautés*. Tome I, vol. 1. Editions Cardinalis, Nouméa.

Fukuda, M.; Narusue, M.; Kato, N. 2002. Changes in the distribution and abundance of the great cormorant *Phalacrocorax carbo* in Japan. *Japanese journal of ornithology 51*: 4-11.

Moon, G. 2000. *The Reed field guide to New Zealand birds*. Reed Publishing Ltd, Auckland.

Keywords New Caledonia; black shag; great cormorant; *Phalacrocorax carbo*; breeding